

Methods of Teaching Sight-Saving Classes

Estella Lawes

Director, Sight-Saving Classes
Cincinnati, Ohio

Revised, 1931

The National Society for the
Prevention of Blindness, Inc.
450 Seventh Avenue, New York, N. Y.

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Foreword

In 1919 the National Society for the Prevention of Blindness published *A Manual for Conservation of Vision Classes*, containing a summary of the principles of sight-saving class work as then understood.

This has been replaced by two publications, one dealing with the organization and administration of such classes,* and the other dealing with the methods of teaching.

This publication, dealing with methods, is a revision of the original edition published in 1926. The present revision includes the experience of the last five years as gained from conferences and teacher training courses and from the *Sight-Saving Class Exchange* published by the National Society for the Prevention of Blindness.

The original publication and the present revision have been prepared by Estella Lawes, director of sight-saving classes in the public schools of Cincinnati. Miss Lawes wishes to acknowledge her indebtedness to the many supervisors and teachers who, through an exchange of ideas and experiences, have assisted in the preparation of the publication.

Suggestions and criticism which may be used in revising the present text will be welcomed.

LEWIS H. CARRIS, Managing Director,
The National Society for the Prevention of Blindness

* *Sight-Saving Classes, Their Organization and Administration*, by Hazel Hadley and Winifred Hathaway, published by the National Society for the Prevention of Blindness, Inc., 450 Seventh Avenue, New York, N. Y., 1929.

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METHODS OF TEACHING SIGHT-SAVING CLASSES

Introduction

Sight-saving classes are such a new development in school activity, and educational ideas are so constantly changing, that no statement regarding methods of teaching can be permanent. Even while this is being written many changes, without doubt, are being initiated. However, a résumé of present practices in conducting classes for pupils with seriously defective vision may be helpful.

Reasons for Establishing Sight-Saving Classes

Sight-saving classes are established for two reasons:

1. To conserve the sight of school children whose vision may deteriorate under ordinary school conditions.
2. To afford an education for children who have such defective sight that school progress is impossible without the use of educational media suited to their needs.

Sight-saving class pupils are naturally divided into two groups:

1. Children With Progressive Eye Difficulties.—In this first group are included myopes, especially those with high degrees of myopia or with a progressive condition. With books held close enough, these children may be able to see the smallest print. In working under this condition the myopia may be increased and may lead to a definite deterioration of the eye itself.

2. Children With Permanently Low Vision.—The second group includes children who have static low vision. They are not able, as in the case of the myope, to use small type, but must depend on the large type to carry on their school work.

The cases used in the above illustrations are only two of the many types of children entering sight-saving classes. As a whole, the degree of vision of these children covers a considerable range. In fact, it is highly improbable that any two cases in a sight-saving class are alike in every particular.

Educational Status of Sight-Saving Class Children

In order to conduct a sight-saving class there are three points which must be clearly understood by the teacher:

1. These Children are Sighted, Not Blind.—The first important step in developing right methods of instruction is to clear away any confusion which may exist between this work and work for the blind. Historically, these classes grew out of classes for the blind. After classes for the blind had been established in public schools it was recognized that there are many children who have such defective vision that they do not fit into the regular classes, and yet are equally misplaced among the blind. They form an entirely separate group. They are not blind, yet cannot carry on school work in the ordinary way. The only common ground is the fact that both groups are visually handicapped. So great is the difference in the degree of handicap that there can be no question but that the sight-saving class child should be classified with seeing children in determining the best methods for his education.

Psychologically the two types of children (blind and sight-saving class) are very different. The blind child, figuratively speaking, sees through his fingers. His chief avenue of perception is tactile. He is aided by his other senses, of course, but in handling educational tools he must rely chiefly upon his sense of touch. For the sight-saving class child the chief avenue of perception is visual. He gets his impressions through his eyes almost to the same extent as does the child with normal vision. It is true that many of his visual impressions are faulty and indistinct.

It is for the purpose of keeping this avenue of perception through the eyes possible of its best use that sight-saving classes have been established. Any relaxation in this effort tends to defeat the purpose of the class. The problem of

instruction for the sight-saving class child narrows down largely to the adaptation of the best teaching methods used with the normally sighted to the needs of the child with defective vision.

2. The Nature and Degree of Visual Handicap.—Normal methods cannot be adapted to these children unless the sight-saving class teacher has a fair idea of the nature of the physical handicap. A practical knowledge of eye hygiene is indispensable. Training in this subject is most valuable, but, lacking this, a teacher can get considerable help by independent study of such books as Posey's *Hygiene of the Eye*, May's *Diseases of the Eye*, and Kerr's *School Vision and the Myopic Scholar*. She may get many valuable suggestions by attending clinics, and by consulting with the oculists who are attending the children in her group. No discussion can be given here of the general principles of eye hygiene, but from time to time the connection between it and the teaching problem will be shown.

3. The Educational Status of the Child.—There are two main reasons why children are retarded in school progress: (a) Mental deficiency and (b) physical handicap. Unless adequate tests are applied, it is frequently impossible to determine whether a mental or physical handicap is the actual cause of retardation. When a child with seriously defective vision, who is of normal mentality, falls far behind children of his own mental age, it is not surprising. Very often, however, a child has a double defect—mental deficiency and low vision. It is generally conceded that mental deficiency is the major defect and should therefore determine the placement. A child handicapped mentally as well as visually will profit most by the training given in a school for mentally deficient children, but in planning his work there should be co-operation between the sight-saving class teacher and the teacher of the mentally defective group so that the sight of the child with the double defect may be conserved.

The Sight-Saving Classroom

Since a very complete description of the ideal sight-saving classroom has been given in *Sight-saving Classes—Their Organization and Administration*,¹ only a brief summary is given here.

Selection of Room.—Because of the kind and size of equipment used in sight-saving classes it is necessary to choose a regulation classroom. This should be one with unilateral lighting, preferably with an eastern exposure. *The Code of Lighting School Buildings*² states: "An eastern exposure is generally considered to be the most desirable for classrooms and a northern exposure the least desirable." In Posey's *Hygiene of the Eye*³ the statement is made that ". . . the hygienic value of sunlight should be given due recognition, which would result in penalizing northern exposures. While north light is preferred for many occupations where sunlight is not permissible, this consideration does not apply to schoolrooms."

A. Equipment

Cupboards.—The books which are used in these classes are so much larger than those in the regular grades that more cupboard space should be provided. The shelves should be so spaced that the books may be placed in an upright position.

Blackboards.—The blackboard is used so extensively by the pupils in the preparation of work that an unusually large area is desirable. It is suggested that when it is possible, blackboards be arranged in sliding panels, one in front of the other, as shown in the illustration (facing page 14).

¹ *Sight-Saving Classes, Their Organization and Administration*, by Hazel Hadley and Winifred Hathaway, published by the National Society for the Prevention of Blindness, Inc., 450 Seventh Avenue, New York, N. Y., 1929.

² *The Code of Lighting School Buildings*, Illuminating Engineering Society, 29 West 39th Street, New York, N. Y., Page 8.

³ *Hygiene of the Eye*. By William Campbell Posey, M.D., Philadelphia: J. B. Lippincott Company, Page 122.

This gives a decided increase in blackboard area, and also makes it more nearly possible for the child to work at his eye level.

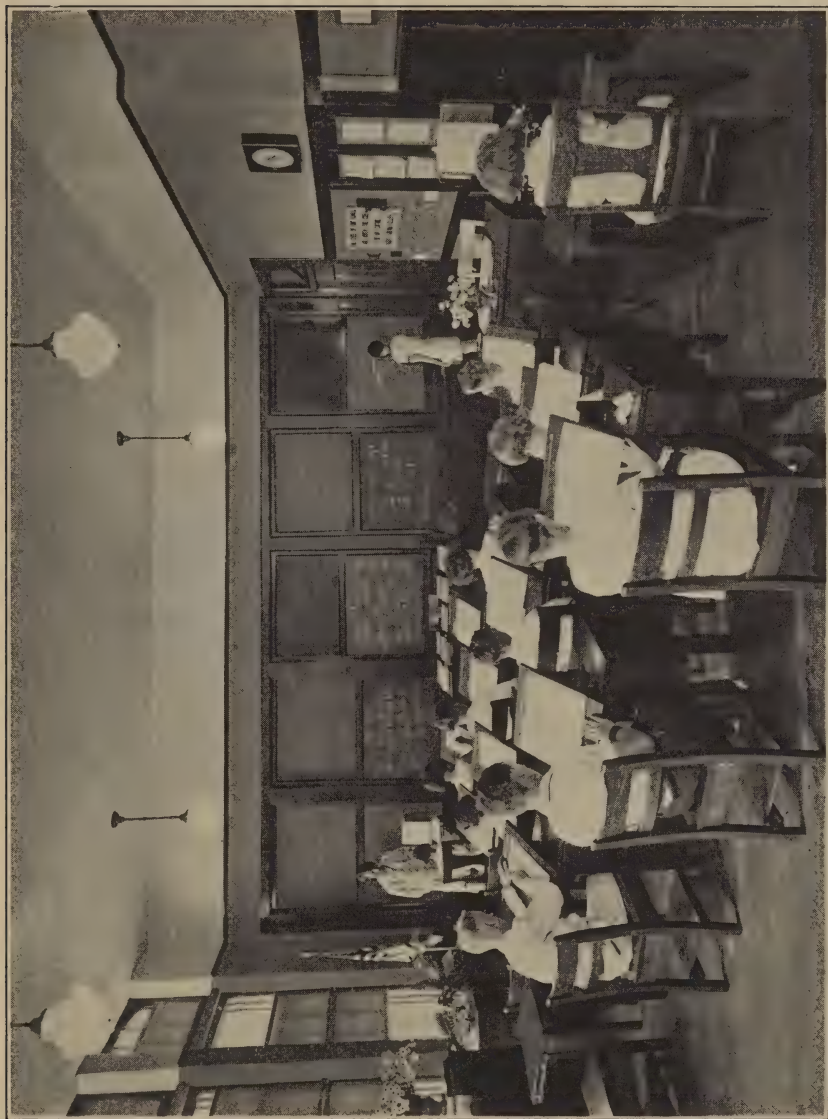
Illumination.—The efficiency of the lighting of a sight-saving classroom depends not only upon the amount of natural and artificial light provided, but upon the control of light through the use of proper windowshades, luminaires and wall decorations.

Natural Light and Windowshades.—The glass area in modern schools is usually one-fifth to one-fourth of the floor area. This is adequate for the sight-saving class. To control the light, translucent shades of buff color are recommended. Two shades should be installed at the middle of the window—one pulling up and one pulling down—so that the valuable light from the top of the window may be available. Various companies manufacture shades of this type which are entirely satisfactory (see appendix).

Artificial Light.—Because so many days in winter are dark, and because sight-saving class children are so susceptible to changes in light, ideal artificial lighting should be installed and should be used freely. It would be advisable to have this illumination planned by a lighting engineer or by reference to some standard code on lighting.

Walls and Ceilings.—Walls and ceilings should be finished with a dull or mat surface. Buff walls with white ceilings are most satisfactory under average conditions. In extreme southern latitudes a French grey or light green may be better.

Seats and Desks.—The main points to keep in mind in purchasing seats and desks are that the seats should conform to all requirements of good posture and that the desk-tops should tilt so that work may be brought up to the child at the proper angle. Surfaces should be dull in finish; sizes should be selected which will fit the children of the various grades using the room (see appendix).



A well-equipped sight-saving class. Note the type of blackboard

Miscellaneous Equipment.—It is understood, of course, that a teacher's desk, chairs, sand table and, if there is no cafeteria within the building, a table for lunch, should be installed. The lunch question will be considered separately, but it may be well to say here that in case there are no facilities for lunch in the school building it has proved advisable to install an electric hotplate with a supply of dishes and cooking equipment; so that at least one hot dish may be prepared for the children at noon.

B. Supplies

Typewriters.—A standard make typewriter with special size type and a good table should be provided. It is suggested that the keys be blanked. The use of the typewriter will be discussed in a later section.

Large Type Books.—Large type books are perhaps the most important item of necessary supplies. These books are expensive, but in ordering them care should be taken that every grade is supplied with some reading material.

Paper.—The paper ordinarily used in sight-saving classes is of rough finish and a deep cream in color. The general tendency is to have the paper unruled, but in some schools this has been ruled with green lines about three-quarters of an inch apart. This paper may be put up in pads or in loose sheets, about 9 x 12 inches. Some of the paper is ruled with the lines 9 inches long, and others with the lines running across, 12 inches long. If these sheets are cut in half, or folded, several sizes of paper are available.

Pencils, Pens, and Chalk.—Most of the work is done with heavy lead pencils, and any type of soft black lead is suitable. Care should be taken, however, that the lead is not so soft that the papers, in rubbing together, will cause the writing to blur. Special pens and chalk should be provided. These are described in detail later.

Non-segregation Plan

Standards of Work.—Because in the average public school pupils are of normal mentality, those in a sight-saving class should be of the same educational status and should not be segregated in the sight-saving classrooms. Standards of work of the sight-saving class should be, so far as possible, the same as those of the regular grade. Compensation for the eye handicap is made by providing ideal conditions under which to work. Children learn a great deal from one another, and the competition prevailing in a normal class is a very valuable part of any child's education. It is understood, however, that sight-saving class children should not do work requiring the use of their eyes in the regular grades. They have a wide field open to them in the oral work which is carried on.

Many children entering sight-saving classes in the lower grades come from homes and families where at least a high school education is expected of every member. Unless the standards of the elementary school are maintained, it is impossible to pass these children on to high school fully equipped to undertake the work. Moreover, a fairly large percentage of sight-saving class children are returned every year to the regular classrooms because of improved vision. It is essential that these children should not fall behind in their work because of attendance in a special class.

Size of Class.—Since in a sight-saving class several grades will doubtless be represented, only a comparatively small group of children can be cared for. It would be ideal if enough classes could be established in any community so that one sight-saving class teacher would take care of possibly four grades, with a maximum number of 16 children.

Co-ordination with Regular Grades.—Maintenance of standards is obtained by a plan of co-ordination with the regular grades, i. e., a child enrolled in a sight-saving class

attends the regular grade of his same classification for oral work. In general, any work which requires the use of the eyes should be done under the direction of the sight-saving class teacher. This plan necessitates a good deal of moving about through the building. If five grades are represented in the sight-saving class, the children in these grades are attending five different regular rooms for oral work at certain times during the day and are having all their written work and preparation with the sight-saving class teacher.

Program Making

It is absolutely essential that a careful program be made; such a program must of necessity be flexible, but it should be adhered to as nearly as possible in order that each child receive his necessary share of attention during the day.

Mechanics of Making Program.—During the first days of school the sight-saving class teacher determines, in consultation with the principal of the building, the regular grades to which each one of her groups is to be assigned for oral work. From the teachers of these grades she obtains a copy of the programs which they are carrying out with their children. This will enable her to determine at what hour of the day the regular teacher will be giving oral work which is valuable to the sight-saving class child.

A simple way of proceeding with the mechanics of program making is to draw upon a large sheet of paper a block of rectangles which will represent horizontally the hours or periods of the school day. Vertically the rectangles will represent the groups which are enrolled in the sight-saving class. The next step is to write in the proper rectangle the activity which each sight-saving class child carries on in the regular grade. In the remaining spaces the special teacher arranges the work which is performed in the special room. This may be work with the teacher or alone. Some teachers find it convenient to make a chart consisting of a series of slots into which small colored cards may be fitted (see illustration opposite). This has the advantage that changes in program may be made by shifting the cards rather than by copying a whole sheet. Green cards may be used to show the activities for which the children go to the regular grade; red to show work with the special teacher, and yellow work alone in the sight-saving classroom. In general any eye use is shown by red or yellow cards. Oral work is shown by the green.

Monday

	First	Second	Third	Fourth
8:45....	Phonics	Phonics	Spelling	Arithmetic
9:15....	Reading	Gymnastics	Geography	Spelling
9:45....	Game	Game	Reading	Reading

Recess

10:30....	Reading	Language	Study	Language
11:00....	Handwork	Reading	Language	Spelling
11:30....	Story	Arithmetic	Arithmetic	Geography

Lunch

1:00....	Phonics	Story	Arithmetic	Arithmetic
1:30....	Writing	Writing	Free	Reading
2:00....	Free	Free	Reading	Free
2:30....	Gymnastics	Arithmetic	Story	Gymnastics

Program Checks.—After the program is made it must be checked in three ways: first, for the purpose of seeing that every child has his share of time during the day; second, to be sure that the teacher is teaching only one subject at a time; and third, to see that there are no consecutive periods of close eye work. The line indicating the activities for every grade at 8.45 o'clock in the morning will show that in a sight-saving class having the first four grades represented the sight-saving class teacher is giving fourth grade arithmetic. The first and second grades are working alone on phonics, while the third grade is having a spelling lesson with the regular third grade class. From this, it will be seen that the teacher is teaching just one thing, that she is supervising the activities of two other grades which are working independently, while one grade is out of the special room attending oral work in the regular classes.

Three colors are shown then on the first line: red, for the work the teacher is doing; black, for the work the children are doing independently; and green, for the work which is being carried on outside of the special classroom (see illustration opposite). This same check should be carried through every hour of the day.

The second check is of work for each grade. Reading down the program for the first grade, for example, will show that during the first period in the day this group has independent work in phonics; during the second period, reading with the sight-saving class teacher; and during the third period, a game with the second grade children in the sight-saving classroom, which may be a number game or a language game. During the next period, which in some schools would come after recess, the first grade group has a second reading period with the sight-saving class teacher. If each grade is checked in this way, the teacher will be able to see at a glance whether the pupil has received during that particular day instruction in every subject which would ordinarily be given in the regular classroom.

The third check is that which has to do with the eye condition. Sight-saving class children should not be required to use their eyes for long periods. If a child has a reading lesson lasting for twenty minutes, the next period of activity should, if possible, be with some work which requires no close use of the eyes. If work has been at the blackboard, the focal distance might be changed by use of pencil and paper. It is often a good plan to let the child move about the room for a few minutes between periods of work.

It must be kept in mind that the first function of a sight-saving class teacher is to save sight, and that every activity should be initiated with this aim in mind. Eyes come first and education second.

Programs Will Vary.—The program which is used as an illustration is perhaps as simple a one as will be found. In different localities the length of period for each subject varies so greatly that in detail probably no two programs will ever be alike. High school and junior high school programs are, for the most part, not much more difficult than those of the lower grades. During any day a regular grade teacher may so change her program that the work planned in the special room may be disorganized. The special teacher must be ready to adjust class activities to temporary and unexpected changes. Every program must be flexible. The same principles apply in all cases, but it must be understood that there may be wide variation and adaptation so long as the fundamentals are not forgotten.

Program Conduct

Division of Work Between Special and Regular Class.—

An actual division according to subject may be made, assigning reading, writing, arithmetic, handwork, and type-writing to the special teacher. In the regular grade oral work in history, civics, geography, grammar, spelling, music, and manual training may be taken. This division will vary considerably in different localities, the main thing to be kept in mind being that wherever the use of the eyes is involved, the work should be done with the special teacher. For instance, when an assignment in history is made by the grade teacher, it is brought to the special teacher, who makes it possible for the sight-saving class child to prepare the lesson. This may be done in several ways. The material may be found in large type books, in which case all that is necessary is for the book to be placed in the hands of the child, who will go ahead with the lesson just as he would if he were in the regular grade using the small type textbooks. A second way of taking care of the situation, where the large type books do not cover the assignment, would be for the special teacher to read aloud from the textbook used in the regular grades. Care should be taken in reading aloud that the lesson is not retaught. There is considerable misunderstanding on this point. A sight-saving class is not a coaching class. It simply makes available, either orally or through large print books, materials which the handicapped child would be unable to use were he in the ordinary grade. If the history lesson which is being prepared calls for the use of maps, it is the function of the sight-saving class teacher to provide suitable ones for the pupil. A full discussion of map making will follow in a later section. After the lesson is prepared the child returns to the regular grade and recites with those who are his equals scholastically. The same idea is carried on in civics and in geography. In language lessons the procedure

is often reversed. There is a general tendency to do more oral work. In the development of composition this is especially true. Therefore the child takes part in the general discussion which precedes the written composition. When the regular grade pupils start to prepare compositions the sight-saving class child returns to the special room to do his work, either on the typewriter or with the special paper and pencils which he is accustomed to use.

Individual Programs.—The sight-saving class pupil should be responsible for all assignments given to him, and it is a great help if each child knows thoroughly how his program works from day to day. It is suggested that after the teacher's program is prepared an individual one be made for each child, so that he may know in what order his lessons follow one another, and just what he is expected to do at every period during the day. If a clock is placed on a wall at about the height of the eyes of the average child, he will be able to determine for himself just when he is expected to go out for any recitation. Some sight-saving class teachers find it advisable to post the program for the whole week on the bulletin board low enough so that it may be read by every one in the class.

Punctuality Essential.—From the point of view of the regular grade teacher it is not easy, as a rule, to have children going and coming at all hours of the day. However, once they understand the situation and appreciate the eye condition of the children who are being taken care of in the special room, regular grade teachers will usually give their full share of co-operation; but the special teacher must never lose sight of the fact that it is a source of interruption and of possible annoyance if the sight-saving class children do not enter and leave the regular grade room punctually and in good order. Not only should they be at the door exactly on time but they should enter in a quiet and orderly manner. When they are dismissed, they should go out of the room in the same way.

Assignments in Regular Class Work.—The problem of getting assignments from the regular grade is worked out in many different ways. In some school systems which require lesson plans from every grade teacher a week in advance it is a very simple matter for the special teacher to know exactly what is being done in every subject. In other schools, however, there is great variation in the preparation of plans for lessons, and the special class teacher must determine the simplest way of finding out plans for the next day and for keeping her children prepared in their lessons.

One of the easiest ways of getting assignments for the sight-saving class child and for both teachers concerned is to have one of the children in the regular grade write down anything that is to be prepared or do any copying necessary. This may be done at the same time he copies his own assignment if he uses a carbon sheet and gives the sight-saving class child the second copy. In some schools the sight-saving class pupil carries a small notebook and the regular grade teacher writes the assignment there. It is well to develop in the boy or girl who attends a sight-saving class a sense of responsibility for his own work. However, it is a good plan for the sight-saving class teacher to check up on assignments frequently, seeing each regular teacher several times a week to be sure that nothing is being omitted.

Transcribing.—Practically none of the textbook material used by children in the regular grades can be used by the sight-saving class child because of the small type. All of this must be made available by recopying either by hand or on the typewriters which may be had equipped with greatly enlarged type. This transcribing may be done by the special teacher, but because of the extent of this undertaking it is advisable to have it done either by students in the commercial departments of the high schools or by some volunteer organization whenever possible.

Special Methods

In discussing the question of special methods in connection with the eye work which must be carried on by sight-saving class children, no idea can be clearer than that which Kerr¹ has stated in his book on school vision: "The point to remember in this work is that reading and writing and figuring on paper are ophthalmologically bad, but educationally to some extent required, and the actual practice has to be a compromise in which as much good as possible is to be got at the cost of as little damage as can be incurred."

A. Arithmetic

Aims.—In teaching arithmetic the aims for the sight-saving class child are exactly the same as for any other group of children. Two things must be kept in mind: first, that the child be prepared for the practical work of everyday life, and second, that he be held to the standard of the regular grade in arithmetic in order to be promoted in a normal manner and to meet the requirements in mathematics which are demanded for entrance into high school. In determining procedure in arithmetic it would be well for the sight-saving class teacher to follow the course of study and the textbooks which are in use in her own school system. Both oral and written work may be used in carrying out the lesson.

Oral arithmetic is of great value to sight-saving class children. They should be trained to do many more processes mentally than is required of the average child.

Because the regular textbook is not suitable for sight-saving class use, certain of the more complicated problems must be demonstrated on the blackboard. The problems may be copied on the blackboard, the child working them

¹ *School Vision and the Myopic Scholar*, by James Kerr. London: George Allen and Unwin, Ltd., 1925. Page 141.

either on paper or at another section of the blackboard nearby; or they may be copied on paper with India ink or heavy lead pencil by the teacher and handed to the child, who solves them either on paper or at the blackboard. Where there are five or six children in one arithmetic class, it would be necessary to copy a set of problems five or six times in order to make them available for each one of the group. Much time can be saved if the problems are copied once and then cut apart so that each child has one problem, which, as soon as he has finished, he exchanges with his neighbor, so that at the end of the period each child has worked every problem in the lesson.

Where typewriters are available, it is suggested that the basic text in any school system be copied, and the pages bound together in notebook form. Many machines do not have a mathematical keyboard, but it is not difficult to write necessary symbols into the copy. Some arithmetic problems have been put into large type, but it is generally agreed that they are not satisfactory. They aim to supplement in a way the regular textbook, but they are of such a nature that they do not fit easily into all circumstances, and should not be relied upon as a substitute for a textbook.

Special Number Devices.—In the catalogs displayed by several publishing companies are found many devices in the way of cards showing number combinations, etc., which are very good for use in these special classes. Care must be taken in selecting devices from a general catalog to be sure that the print is large and clear, that the paper is of light color, preferably cream, and that it has no glaze. It is advisable for teachers to see material of this sort before purchasing. Catalog descriptions are often misleading. One set of material which seemed to be suitable in the catalog proved to be printed on dark green cardboard with very tall, thin letters; it could not possibly be used.

Work Must Be of High Standard.—Every effort should be made to compare the progress of the sight-saving class

group in arithmetic with the progress of the children in the regular grades. This can be done in several ways. Groups from the regular grade may be invited into the sight-saving classroom to take part in certain arithmetic lessons. The sight-saving class child who excels in his own small group is often surprised to find that he does not excel when he is competing with a child of normal vision, and the opposite is also true. It is encouraging for a child with defective vision to find out that he can do just as well as the boys and girls who have normal eyes. These children have often been outcasts in the grades from which they came. They could not do the work because they could not see the blackboard or the books and were failures because of physical disability. Because they are normal mentally, they appreciate very keenly their failure to keep up with the children of the same mental ability, and one of the first and most important problems of the sight-saving class teacher is to restore to the child his confidence in himself. Competing in arithmetic is one way of accomplishing this.

Tests.—Another way of keeping up to standard is to send the sight-saving class child into the regular grade for oral work in arithmetic. This can be arranged between the two teachers. It has been found valuable to give to the sight-saving class child the same tests which are taken in the regular grade. If the special teacher keeps in touch with the regular teacher, she will know when tests are to be given and often the regular teacher will be glad to send her a copy of the test to give to the sight-saving class child in his special environment.

Some of the standard performance tests in arithmetic are printed in sufficiently large type to be used by sight-saving class children. It is often very helpful in case they are not printed in large type for the teacher to copy them so that her children may be rated by the same scale which is used to determine the rating of the average child in the school system.

B. Reading

Supply of Material.—One of the most difficult problems connected with sight-saving class work is to obtain reading material. For a number of years books have been put out in 24-point type on heavy cream paper, on a variety of subjects. Every year new titles are being added, but the cost is still almost prohibitive to school systems maintaining sight-saving classes.

Limitations.—We learn to read for information and for pleasure. If the sight-saving class child is discouraged from much reading he is being cut off from a source of pleasure and information, and efforts should be made to substitute other activities for at least a part of the time which would ordinarily be given to reading. These children cannot go to the public library for books because the type is not of sufficient size for their needs. If by chance the child is allowed to do so, he may possibly break down by one evening's reading all the good which has been accomplished in many days in the sight-saving class. When it is recognized that it is possible for many sight-saving class children, particularly myopes, to read the smallest type, but that in so doing eye difficulties may be increased, it is easy to understand how essential it is to substitute other activities for reading habits. With farsighted children, or hyperopes, the eyes are constantly under a strain no matter whether the work is near or at some distance. For such children reading habits should be discouraged. In some of the static cases there is no particular strain to the eye involved in reading. These children simply cannot see the small type, and in their efforts to do so the nervous strain is intense. The sight-saving class teacher, then, has as her problem the planning of the minimum amount of reading consistent with the carrying out of school activities. During the school day, if the children must read geography or history lessons, it would be well to omit a reading lesson as such. It is suggested that sight-saving class teachers interest

their children in club activities, and that every effort be made to satisfy a child's desire for stories through reading aloud at home by the parents or brothers and sisters.

C. Writing

Aims.—Since there should be a minimum of eye use by sight-saving class pupils, as little writing as is possible should be required. Legibility should be the aim. This may be accomplished by keeping letters approximately square in shape, without slant or shading.

Types of Writing.—Either cursive manuscript writing¹ or running print may be used, so long as it is legible. The latter is desirable because of the simple construction of the letters through the omission of unnecessary connecting strokes, but even this type of writing may become illegible when it is done carelessly. It should be used in the preparation of lessons by the teacher. Children imitate the writing done by the teacher to such an extent that it is necessary for that work to be done with a maximum of neatness and care.

It is often difficult for special teachers to decide which system to teach and it is probable that the procedure ought to be very flexible. Children entering the first grade whose eye condition is such that their attendance in sight-saving classes throughout school life seems probable might be taught manuscript writing. Those who enter in higher grades and who have established writing habits present an entirely different problem. They should be required to make their lettering large and round, omitting all unnecessary strokes. It may be noted that often these children adopt manuscript writing in imitation of the teacher, and on return to regular grades conform to this writing standard without difficulty.

Size of Writing.—The size of letters depends entirely upon the distance at which the writing is to be read. Copy

¹ "Manuscript Writing and its Value to a Sight-Saving Child," Erma G. Grill, *Educational Method*, April, 1930.

to be read at the desk should approximate in size the print used in the large type books. At the blackboard the size should be determined by the distance at which it is to be read. It is important to have the work at the level of the child's eyes, with words and letters well spaced.

Materials Used in Writing.—The materials generally involved in the process of writing are chalk, pencils, pens, and ink.

1. Chalk.—Chalk used in sight-saving classes should be fairly soft. Old Faithful-Sterling is one of many kinds which are satisfactory. This gives a good even line without producing an undue amount of dust. Some experiments have been made using yellow chalk instead of white. In certain types of eye difficulties yellow on black seems more legible than white on black; its use on blackboards should, however, be limited. Several sections of blackboard covered with writing in yellow chalk may produce a glare which some pupils find uncomfortable. Discreet use in certain cases is probably a good plan.

2. Pencils.—Pencils offer very nearly the same differences as chalk. The lead should be black and soft, so that the lines produced are clear and even. A second feature to be desired is that the pencil mark does not rub easily. Some pencils used may fulfill writing requirements but may break so easily as to be impractical. Because the pencils are soft they wear down quickly. When the children sharpen them by hand, they break the points and whittle away a pencil in a very short time. It will be wise to have in each room a pencil sharpener large enough to hold the pencils commonly used in sight-saving classes. The large or giant pencil sharpener should be definitely specified in a requisition, and replaced when necessary. A dull blade is poor economy. The children should be taught how to use these pencil sharpeners, for, unless they are watched, they may waste the pencil almost as rapidly as they do when using a knife.

3. Pens.—With the older children it is found necessary to make permanent copies of a good deal of the work. In notebooks the pencil writing rubs so that the notes become illegible and a source of eyestrain. The average pen does not answer the needs of the student because the lines produced are entirely too fine. No pen so far has been absolutely satisfactory for sight-saving class use, but the Speed Ball No. 4 and the Esterbrook Drawing and Lettering Pen No. 1 are the best that have been found. These are rather expensive and should be used with care. The Esterbrook pen is made with a flat disk at the point and requires some skill to use, because this disk must be kept flat on the paper at all times to produce a heavy line. With the Speed Ball pen the point is cup-shape and is much easier to use. In some sight-saving classes the older children use very heavy fountain pens. These are not entirely satisfactory. They are expensive, easily lost, and are likely to make a shaded line which is not desirable.

4. Ink.—School ink is usually very thin, and blue or gray in color. India ink is quite satisfactory because of its color, but it is expensive and likely to get thick. Some sight-saving class teachers have found that a mixture of India ink and school ink, half and half, answers every need of the children. The quality and color are good, and the expense about half that of India ink alone.

Use of Lines.—There has been a good deal of discussion as to whether lines should be ruled on paper and blackboards, with a growing preference for unlined surfaces. Under no condition should blackboards be ruled with white lines. When the white chalk writing is added to these white lines, it becomes a source of eyestrain, especially in astigmatic children. The lines alone would cause fatigue. Some blackboards have been ruled with a black wax crayon. This does not cause the fatigue which is produced by white lines, and the difference in texture of the surface assists the children in keeping their writing well spaced

and straight. Some sight-saving class teachers feel this is an asset with children who are beginning to learn to write. It might prove helpful if a small space low on the blackboard were ruled in this way for the beginning children. In most cases the unlined blackboards will be most satisfactory, if the teacher requires the children to write neatly, space lines well and write straight across the blackboard.

These same ideas may be applied to the use of lines on paper. Several years ago there was much experimentation with different colors of lines and different qualities of paper. After trying blue, purple, and green lines on manila paper, the green lines were found to be most satisfactory to the children. Lines on the paper have been accepted without much thought of using any other method. Recently, however, there has been a tendency to use unruled paper, just as there has been a tendency to use unruled blackboards. Theoretically the idea of not using lines is excellent, but from many practical aspects lines are a great help in producing the end desired. It is suggested that both lined and unlined paper be purchased for sight-saving classes, and that, as far as possible, the children be encouraged to use paper without lines; where legibility must be sacrificed for the sake of having unlined paper, there is no question but that the ruled paper should be used.

Formal Writing Lessons in First Two Grades Only.—

Except in the first and second grades, sight-saving class children should not be given formal writing lessons. There will be opportunity enough in the written work required to establish good writing habits. Formal writing lessons are an additional tax on eyes that are already weak.

D. Typewriting

The average teacher, on beginning sight-saving class work, does not have any experience in the theory and methods of teaching typewriting and is not able to use a machine. The best procedure for a sight-saving class

teacher is to take a short course in typing, so that she may become familiar with the best methods in practice. If this is not possible, she may observe a beginning class or make a study of a typewriting manual which is in use in her own school system or in some recognized business school.

Typing to Conserve Vision.—The only reason for teaching typing to sight-saving class children is to conserve vision. The typing lesson should always be a period of eye rest. For that reason the "touch" system should be used. This is the general method followed in all business schools, and any good basic text may be selected by the sight-saving class teacher for the teaching of the keyboard. However, standard texts must be simplified for the use of young pupils. Detroit has in use a very good outline of typing for sight-saving class teachers.¹

Typing Not Vocational Preparation.—An important point to be kept in mind in teaching typewriting to sight-saving class children is that typing is not taught as a vocation. Typists must have good sight in order to do the many things which are required in connection with typewriting. They must often do filing and look up addresses, as well as take notes in shorthand, and this is beyond anything to be expected of a child with defective vision.

Use of Typing.—As soon as a child masters the keyboard he should begin to make use of his knowledge in the preparation of lessons, using the typewriter instead of pen or pencil whenever possible. There may be considerable elimination of eye use in this way. When any work is to be copied care should be taken that it is placed on a level with the child's eyes and directly in front of him. No work should ever be laid flat at the side of the machine. Stands may be purchased from any typewriter company, but care should be taken that the one chosen is independent of the typewriter or table so that there can be no vibration of the copy as the

¹"Typewriting in Sight-Saving Classes," Loretta F. Ryan, *Sight-Saving Class Exchange*, September, 1930.

machine is used. Where no copy holder is available, the typewriter may be moved near a bulletin board on which the copy can be held by thumb tacks.

Typewriters.—Standard typewriters equipped with enlarged type in capitals and small letters are available. This type, while somewhat smaller than that used in the large print books, may be read by children in sight-saving classes. Portable machines are now manufactured with this type and are particularly useful in junior and senior high schools. Heavily inked ribbons give the best results and should be specified when ordering.

Studies Taken in Regular Classes

In order to obtain for sight-saving class children the social advantages of participation in the regular grades, it is necessary that there should be considerable co-operation and understanding between the regular and the special teacher. In the traditional school very little adjustment is necessary, because the subject matter and written recitation periods are arbitrarily fixed. At the present time, however, there is a trend in education toward a more informal type of instruction; for instance, under "Social Studies" there have been grouped geography, history and civics, without any sharp differentiation. The progressive education movement has come to the fore, and types of organization and instruction, such as the Dalton and Winnetka Plans, and the Contract Method are being used. The adjustment of sight-saving classes to these situations, though often difficult, is possible of accomplishment. Because classification by subjects is universally understood, the question of co-operation in oral work is discussed here in that manner. It is not difficult to apply these suggestions to various situations.

A. Language

Participation in the language lessons presents as few difficulties as any of the subjects taken by sight-saving class children in regular grades. Methods vary considerably in different localities, but with the growing emphasis on oral English the use of children's eyes is reduced to the minimum. Where any written work is required, sight-saving class children return to the special room to do it under supervision.

Book Reports.—Book reports which are required in junior and senior high schools offer a particular problem. Not many texts are available in large type. However, if a child in the regular grade chooses the same book for the

report which is selected by the sight-saving class child, it may be read aloud by the child with normal vision. If the book is not too long, the sight-saving class teacher may read it aloud. However, great care must be taken that the report is absolutely independent work on the part of the sight-saving class child. There is a tendency for the sight-saving class teacher to stress the most important topics and to give help in outlining reviews. By using the typewriter with the enlarged alphabet, all book reviews may be prepared by the sight-saving class child from the preliminary outline to the finished product.

Formal Grammar.—Where formal grammar is required, it is necessary that a good deal of copying be done by the sight-saving class teacher. There is no formal grammar text in large type, and it is doubtful whether one will ever be printed, because grammars vary considerably throughout the country and no one text could be made which would satisfy all demands. Copy should be made on the special typewriter from the text used in the regular grade and the pages bound together in notebook form. Where there is a printing department in the same school system in which a sight-saving class is located, it is often possible to have printed in large type lists of words or lessons for sight-saving class children.

B. History

There is considerable history material in large type. In case it is not the text used by the regular grades, the lessons may be read to the sight-saving class child as they are assigned from the regular textbook, or they may be read by a pupil who is studying the same lesson. The history books in large type may be used to parallel the lessons as they are assigned. Often regular grade teachers are glad to have additional textbook material introduced into the history lessons. It is found frequently that the regular grade teachers borrow the large type books to use in connection

with lessons they are giving. It will be well to mention here that the sight-saving class children should keep notebooks for every subject which is taken with the regular grades. The history notebook, for instance, may be simply a few sheets of wide-lined paper fastened together in a cover of heavy construction paper. In this notebook may be kept the assignments or notes on lessons which the children of the regular grade are accustomed to keep for themselves. Where there is no text available, this often serves as a basis for a review at the end of a semester.

C. Geography

So far as texts are concerned, geography offers the same problems as history. There are many texts available on the subject in large type; probably the best material is contained in the *Nellie Allen Geographical Readers*, which have been reprinted in large type. In connection with geography, the sight-saving class teacher must provide maps and illustrations for the sight-saving class child who is unable to get his ideas from the small pictures used in the average geography. A section follows which deals entirely with the problem of maps and map making. In geography it will be well to keep a notebook, just as was suggested for history.

D. Spelling

Spelling offers a little different problem. There is such a variation in the methods of teaching spelling that no particular rule can be laid down for the procedure of the sight-saving class teacher. Where the lessons are taught orally and the recitation is chiefly oral, the sight-saving class child may attend the spelling class with the regular grade children. Where there is a text and the lessons are assigned from it with the idea that later the work will be written by the children at the dictation of the teacher, the problem is very different. In this case the text must be typed by the

sight-saving class teacher in notebooks, care being taken to number the pages and articles to correspond with the spelling text. The sight-saving class child may then study from this enlarged copy. For recitation of the lesson, one of two things may be done: (1) If the regular classroom is well lighted and the sight-saving class child has a seat where the light is good, he may carry with him pencil and paper and write the spelling lesson at the dictation of the regular class teacher at the same time that the other children in the room write it. (2) Where the light is poor, it is not wise to let the sight-saving class child do any written work with the regular grade. In this case the sight-saving class teacher may take a few minutes to dictate the lesson which the sight-saving class child has prepared.

E. Nature Study and Hygiene

In nature study and hygiene the same ideas are carried out. The regular class teacher is responsible for the work which is done by the sight-saving class child.

F. Tests and Examinations

All papers should be graded by the regular teacher, but it is important that these papers be sent back to the sight-saving class teacher so that she may know in what particular way she must supplement the work so that the sight-saving class child may not drop behind the rest of the class. The same thing is true in examinations and tests. Usually the examinations or tests are written on the blackboard, and the regular grade children being given pencil and paper are required to answer the questions. It is inadvisable for the sight-saving class child to attempt to do anything which requires as much reading and writing as this in the regular classroom. If the regular teacher will send a copy of the examination questions to the sight-saving class teacher, she can recopy them or dictate them to the child with defective vision, and he may either type or write the answers.

In either case the answers to the examination questions should be returned to the regular grade teacher for correction. The sight-saving class teacher must be responsible for getting examination questions from the regular teacher. There is no uniform way in which this may be done, but the ease with which it may be accomplished depends upon the understanding and co-operation between the two teachers. When reports are made, the card should be sent to the regular class teacher for the grades in the subjects for which she is responsible, and the sight-saving class teacher should fill in the grades for arithmetic, reading, etc.

Maps and Map Making

In connection with the study of geography and history the sight-saving class teacher is called upon to provide maps which may be used by her pupils. Very few maps can be used in their original condition for sight-saving classes. Usually they are too detailed and not definite enough in outline. Practically every map must be adapted in some way for sight-saving class use.

The following is a discussion of ways in which some maps have been adapted for this use. It is merely a suggestion and is not final in any way.

A. Globes

Globes Re-colored.—In ordering equipment for a sight-saving class room a 12-inch or an 18-inch globe should be included. Care should be taken that the land masses are shown in strong color and that the outlines are definite. Some globes are improved for sight-saving class use by outlining the continents with India ink. The surface of a globe should always be dull. If this finish cannot be obtained from the manufacturer the gloss may be removed by wiping the globe with a weak solution of vinegar and water or by using flat varnish over the whole surface.

Small Globes.—Six-inch globes for individual use may be prepared in the same way. These are valuable because they may be carried to the regular classroom when necessary. The continents, of course, are very small and should not be used for any detailed work.

How to Make Relief Globes.—Relief globes are very expensive, but may be made very easily by the sight-saving class teacher. An old globe may be used, perhaps one which has been discarded by the regular class teacher, and string glued around the outline of the continents. When this is dry, the continent is covered in relief with putty. It takes several days for this to harden. The continent may

then be colored and shellacked. If the shellac, after drying, gives too high a polish to the globe, it may be gone over with flat varnish, which leaves a soft, dull finish. It is an excellent plan for a small amount of flat varnish to be included among the supplies for the sight-saving class, for with it the teacher is able to remove gloss from almost any painted or varnished surface.

Blackboard Globes.—Blackboard globes may be obtained from a number of school supply firms. They are good for teaching zones and meridians. To draw the continent on a blackboard globe is a very difficult matter and is not satisfactory because, with the mass of outline, the children are often unable to determine which is land and which is water unless the oceans or the continents are colored. On some blackboard globes the ocean has been painted green or blue, leaving the continent in black. Chalk lines show equally well on either surface, but the blackboard globes are not a great asset until after this coloring has been done.

B. Blackboard Wall Maps

Several blackboard wall maps can be used without great change. They are available for all continents, but care must be used in selection, since a good many are spoiled for sight-saving class use because of the many lines of latitude and longitude in the background. Any map which has too many unnecessary lines should be avoided. Latitude and longitude may be indicated in the margin and connecting lines drawn when necessary. A checker-board effect in any map should be avoided. Maps may be drawn with white or yellow chalk on blackboard cloth. These colors seem to be equally good. When using maps of this type, they should be made the basis for only one project at a time; rivers or cities or products. Colored chalks are valuable for use in this connection.

Colored Wall Maps.—Only a few of the ordinary colored maps are good for sight-saving class use. There is usually

too much detail, and the colors do not contrast enough to show the difference between states, countries, and oceans. If a map of this sort is used in a sight-saving class, it may be improved considerably by outlining with India ink.

C. Desk Maps

Because desk maps are small and easily handled they may be carried to regular class recitations. In buying desk outline maps avoid any map which has lines of latitude or longitude drawn in the background. If a map of this sort comes into a sight-saving class, it may be cut out and remounted on a plain sheet of paper. It is often good to use tan, blue, or green construction paper as a background. Many desk outline maps are improved if the outlines are made heavier.

Stencils for Maps.—No sight-saving class child should be required to use his eyes for the purpose of drawing maps. To meet the needs of such an assignment by the regular grade teacher the sight-saving class teacher can cut out a stencil of the map desired from dark-colored construction paper. A plain piece of white or cream paper may be clipped to the back of this stencil. The sight-saving class child then has a map on which he may note simple features. This paper may be replaced as often as is necessary. The outline of the stencil will serve for the production of many maps.

Materials for Coloring Maps.—In coloring maps, India ink or water coloring has proved most satisfactory. Wax crayon should never be used for this purpose. It does not give a smooth even color, and has a glossy surface, which is most undesirable. India ink comes in all colors. Liquid Tempera Colors are very good and dry with a dull finish. In coloring maps the work should be so planned that the adjoining colors contrast—thus dark blue and purple should not come together. A good map for sight-saving class use can be made by holding a Finch Topography Map

of the United States up to a window and tracing the outline of each geographic division on tonal paper held against it. The New England states, traced on green tonal paper, may be cut out and pasted on the original map. The Atlantic states may be cut out in the same way in yellow, the Southern states in blue, etc. After each section is completed the states are outlined with black India ink. A map of this kind can be made gradually as the class proceeds in geography. Unfortunately, the map of the United States is the only one of this kind printed.

Silhouette Maps.—Some sight-saving class teachers have found the silhouette map useful. It may be of black on white or white on black. A state map may be cut from black paper and mounted on heavy white drawing paper. The capital may be shown by a gold star, with the principal cities and rivers drawn in white ink.

Other Materials for Maps.—Light-colored windowshade cloth and Sanitas, a dull finished oil cloth, may be used as a basis for maps by sight-saving class teachers. Blackboard cloth is good also, for it can be rolled up and carried to the regular class; with an outline painted in white, it may be the basis for a good many projects.

No Names on Maps.—The names of states, cities and rivers should not be written upon maps. A map prepared in this way is so confusing that the outlines are often lost. The best plan is to put a number near the feature to be emphasized and below show by a key just what is meant. All lettering should be neat and clear. Mounting maps on construction paper will make them last longer. Large envelopes clearly labeled will help in cataloging and finding maps when needed.

Posters and Illustrations

Limitations in Use of Pictures

There is an increasing tendency in schools to use illustrative material in connection with social studies. Such material ranges in character from the motion picture to the postcard. Sight-saving class children either do not see the pictures or get false conceptions from them because of small size or the indistinct outlines. It is a very important part of a sight-saving class teacher's work to make it possible for pupils to have illustrative material suited to their needs.

Silhouettes

Mother Goose Silhouettes were among the first pictures which were used without considerable change. With this idea as a basis, other silhouettes may be made illustrating all types of activity. They are simple and have a minimum of detail, but they do not satisfy so far as color is concerned.

Use of Colors

There are many sets of simple line drawings, such as Poster Patterns based on "Little Folks of Many Lands," which may be colored by the sight-saving class teacher. Two sets, "Birds to Color" and "Flowers to Color," are very good. They are considerably improved for sight-saving class use if outlined with India ink after coloring and mounted on construction paper of harmonizing shade. There are excellent built-up posters in sets entitled "Birds," "Flowers," "Child Life," and "Hiawatha." These consist of posters which are very simply outlined. In such packages are sheets of colored paper with corresponding outlines. These may be cut out and pasted on the original outline. In the posters of flowers the outline of the leaves is printed on the green paper. When they are cut out, the green leaves are mounted on the background

of the original poster. This method of making posters may be used by the teacher in various projects if she is always on the alert for new ideas and materials.

Use of Cut-out Pictures

Another interesting project using pictures has been worked out in a sight-saving class. In the *Ladies' Home Journal*, *Good Housekeeping*, and several other magazines of this type, there are beautifully colored advertisements which show foods prepared ready to serve. These pictures may be cut out, mounted, and outlined with India ink, each one on a separate sheet of construction paper. In one corner a price may be printed very clearly. Thus, on a picture showing an orange and a glass of orange juice, the price, 5 cents, is placed; a dish showing bacon and eggs may be priced 15 cents. These posters may be put in the chalk tray around the room and used to represent a cafeteria. The children in the sight-saving class may choose their lunch for the day, with one child acting as cashier. Through the use of toy money an excellent lesson may be given in simple arithmetic, as well as in the use of United States money. The same set may be used as the basis for a lesson in hygiene. It takes some time to collect a set of posters of this kind, but they are extremely useful and may be used in a variety of ways.

Contrast Necessary

There are often pictures in the *National Geographic Magazine* which can be used for sight-saving class children. Care must be taken that only clear, simple pictures are selected. A picture of a polar bear against a background of snow may seem almost hopeless at first, because the contrast between the white of the animal and the white of the snow is not sufficient to be seen clearly by the children. The teacher simply outlines the bear with India ink so that the animal stands out very plainly. Another picture

shows a snow-capped mountain against a sky. The contrast of the mountain top with the pale blue of the sky is not great enough for the children to see, and that, too, is outlined. The results may not be as artistic as the original but it is a great deal better to give the children some conception of these things than to deprive them of all pictures.

No Postcard Pictures Used

Postcards have no place in a sight-saving class. They are too small in size to afford a sight-saving class child an accurate idea of the illustration. While they play a very important part in a good deal of the class work with children of normal vision, the sight-saving class teacher should endeavor to provide pictures which are much larger and much simpler.

Where to Find Suitable Pictures

Keeping in mind that illustrations must be clear and simple, an ingenious teacher may find many suitable pictures for her class. It is by being constantly alert for sight-saving class material that the best illustrations are found. Often these come from the most unexpected places. It is understood that all material of this kind is prepared by the sight-saving class teacher. Sight-saving class children should not use their eyes for the preparation of any pictures of this type. These illustrations are used just as similar material is used with normally sighted children.

Special Activities

In addition to the work which is prescribed for any particular grade, the sight-saving class teacher is required to carry on a number of special activities. These, in some respects, do not bear any close relation to each other, but are more or less connected either with the work in subjects or in the health program. For this reason they have been grouped together under the heading "special activities," a designation which will probably be understood by all sight-saving class teachers.

A. Handwork

For some time after sight-saving classes were established, it was thought that the type of handwork produced by blind children could be used satisfactorily. It is a well-known fact that no matter how little vision an individual may have, he will use that vision to the limit. At one time an attempt was made to teach sight-saving class girls to sew, in the same way as that in which blind girls are taught to sew, namely, by sense of touch. Theoretically this is possible, but in actual practice the sight-saving class girls at every opportunity used their eyes for their work. For that reason sewing for girls in sight-saving classes has been abandoned. The same is true of weaving. The strings which form the warp on the looms may be a source of eyestrain, and sight-saving class children, instead of weaving by touch, will use their eyes in their endeavor to see where to place the shuttle. Although basketry does not demand such close use of the eyes as sewing, there is no real reason for introducing it into the handwork curriculum.

Handwork Must Be Motivated.—No handwork should ever be given to the children simply to keep them busy while other grades are reciting. It should always be motivated in some way by the work which is taken along academic lines. In assigning any activity the sight-saving



Despite serious eye difficulties, these little people can undertake many projects

class teacher should always ask herself, "For what reason am I giving this handwork?"

Use of Sand Table.—A sand table should be in use constantly. There should be a project in process of development at all times. The sand table should be an educational tool, not a plaything.

The children in one sight-saving classroom worked for a considerable length of time in preparing a sand table which represented the ideas they were getting from their geography lessons on Egypt. The boys brought in clay which they found on a hillside and spent some time in modeling the pyramids and sphinx. With the aid of blue paper representing the river they built up the sand to show the course of the Nile. Other children modeled the camels or dressed clothes-pin dolls to represent people. Palm trees were made by winding brown crêpe paper around sticks and placing at the top several long leaves cut from green crêpe paper. These were arranged in a most realistic manner along the banks of the river. The project occupied several days, and in the end the children had a fairly graphic picture of the Nile valley. One of the older children contributed an obelisk on which he had placed hieroglyphics of his own manufacture.

Posters.—One group of children studying the voyages of Columbus made a number of very interesting posters in which even the smallest child had some part. On a sheet of construction paper they pasted dark blue paper for water, with a lighter blue above for sky. On this ocean they placed the three little boats with the white sails outlined clearly against the skyline. The posters were very effective, and the children had expressed their ideas. Wherever posters are made, cutting should be done free hand. It is surprising how adept the children become at this form of activity. Sight-saving class children should not be required to use their eyes for close work with paints or crayons. Wherever they need a color it can be cut from a

piece of colored paper, thus reducing the use of eyes considerably. Sometimes children ask for titles and lettering on their posters, and to satisfy this demand they have been taught to do free-hand cutting of the alphabet. This is easily taught, and a great delight to them.

Manual Training.—Some forms of manual training have been found to be excellent for both boys and girls of sight-saving classes. It must be understood in placing the sight-saving class children with the regular grades for manual training that they are not to be required to use their eyes for making drawings. In doing coping saw work, they may be allowed to follow a very heavy black line.

In some classes, especially those located in buildings where an activity program is carried out, it may be advantageous to have a manual training bench with a few tools in the sight-saving classroom. The special teacher may supplement the work done in the regular manual training period by special assignments in connection with the various activities of the pupils. Girls seem to take as much interest in manual training as do the boys.

Domestic Science.—Girls in sight-saving classes ought to participate in the domestic science work of the regular grades. They may not undertake sewing, however, and this fact may cause some difficulty in connection with the program. In some schools where cooking and sewing are given in alternate terms, the girls in the sight-saving class are given extra work in cooking, serving and budget planning at the time the regular class is sewing. Notebooks are kept for this work in exactly the same manner as for any other subject.

B. Physical Training

For the most part sight-saving class children participate with the regular grades in physical training. However, this participation should be only upon the approval of the oculist who has charge of the child's eyes. Many oculists

do not wish high myopes to take any bending exercises. Since these may cause an undue strain on the eyes, some oculists believe that in extreme cases of myopia any sudden blow or strain may cause a detachment of the retina which may result in blindness. In addition to the work in the regular class some special gymnastic work may be desirable. When a child has only one eye, his head is usually turned so that that eye comes to the center of the line of the body. This causes a twisting of the spine, usually making one shoulder and one hip higher than the other and brings about a strain throughout the whole body. Children who are nearsighted and who have the habit of bending over their work develop round shoulders and cramped chests. It is extremely doubtful whether corrective exercises can entirely overcome such faults of posture, since they are produced by defects of vision which cannot be corrected, but physical training and health education may increase bodily vigor and benefit the children.

C. Eye Hygiene

It is not enough for the sight-saving class teacher to protect the eyes of her children in every way possible; she should so instruct them that, as they go through school, they may learn more and more how to take care of their own eyes. One of the best courses in eye hygiene which have been prepared for this purpose is available in mimeograph form.¹ The question of eye hygiene with children of defective vision must be handled in such a way that the child may acquire the best eye habits and care without becoming morbid on the subject. Children should not be encouraged to discuss their eye defects with other children, but should be taught to recognize their limitations in the use of eyes, to recognize the necessity for straight, clean glasses, and to be so conscious of light that they will always place themselves in the best possible position when doing

¹ *Outline of Eye Hygiene for Children*, by Olive S. Peck and Shandor Monson, M.D., Cleveland, Ohio.

any reading or written work. It is obvious that no teacher can direct her children in this subject of eye hygiene without knowing something of the anatomy and hygiene of the eye as well as common eye defects and diseases. It is essential, therefore, that the teacher take every opportunity to study this subject and to recognize from oculists' reports just what difficulty each child in her class is facing. It is most unwise for a teacher of a sight-saving class to discuss her pupils' disabilities with other persons, especially in the child's presence, and knowledge of individual differences should be obtained from written reports or through consultation with the child's oculist.

D. The Lunch Hour

Lunches Desirable.—Children in sight-saving classes usually come from long distances, and it is seldom that any group is able to go home at lunch time. When it is realized that eyes often reflect the condition of the body, it becomes apparent that the question of nutrition is an important one for sight-saving class children. Nothing could be more dismal than for children to eat a cold lunch in some of the dark basements where they are sometimes sent at the noon hour. Where a lunch is served in the building the sight-saving class children may obtain it in just the same way as do other children who attend that school, but frequently there are no facilities of this kind. It then becomes necessary to install an electric hotplate, with enough dishes, pots and pans to cook and serve at least one warm dish for the children's lunch. Usually the teacher, or the older pupils, boys and girls alike, take care of the cooking. A simple way to handle this situation is to cook one warm, nourishing course, allowing the children to supplement this with sandwiches and other wholesome food brought from home.

How to Prepare and Serve Lunch.—At lunch hour the table in the room is set by some of the children. In this the small children may participate while the older pupils

are preparing the food. At the proper time the children place their lunches on plates. No paper bags or bundles should be brought to the table. The teacher or an older pupil then serves the hot food and all eat together. After lunch the children clear the table, wash the dishes, and make everything ready for the afternoon sessions. This is not as complicated as it may seem, and where it is made a particular privilege to participate in the preparation of lunches, or in clearing away, the children are very anxious to have an opportunity to do these things. Everything should be done as simply and as quickly as possible so as to have opportunity for some out-of-door recreation during the noon hour.

What to Prepare.—The easiest things to cook are, of course, the canned soups, which are very nourishing; but soup should not be given every day. The children like boiled rice, macaroni with cheese or tomatoes, tapioca pudding, boiled potatoes with plenty of butter, and cocoa. In one school the children enjoyed having milk toast at noon. Naturally, emphasis should be placed on milk and green vegetables in the diet of every child. In choosing food two things must be kept in mind: food should be nourishing, and it should be easy to prepare. The child who will not eat this, that, or the other kind of food is the topic of much discussion among sight-saving class teachers who are dealing with the lunch problem. Children are good imitators in this respect and often reflect the ideas about food which are held at home. Public opinion can be just as strong at school. If the teacher and the rest of the children are eating a certain dish, it becomes "quite the thing" to eat, and the reluctant one usually falls into line. It is a good idea to have the children suggest a menu for the week, and after they have agreed on certain dishes, the teacher may tactfully introduce new ones.

Other Lunch Hour Activities.—The noon hour may easily be made the most delightful period of the whole day.

Gathered around the table the children lose the formal attitude which they are so likely to assume with the teacher, and the group becomes one of good friends. At that time they tell of their experiences at home and with each other, and it is most valuable for the teacher if she can develop such a sense of freedom among the children that through it she is able to learn things from her group which may aid her in helping them. It is also an opportune time for cultivating table manners. Any corrections which are necessary along this line should be made privately after the lunch hour is over.

Plan of Conducting High School Classes

Sight-saving classes were first established in the elementary grades, and it is only within the last few years that any considerable number of children from these classes have entered high schools. As the child advances in the grades he should be released more and more from the close supervision which the teacher has given to his eyes and should gradually be taught to assume responsibility for himself. In junior high school the pupil is not yet old enough to assume too great responsibility, hence junior high school sight-saving classes are conducted in much the same manner as in the elementary schools. In the senior high school, however, the pupil may be placed with those of normal vision and have as an advisor a sight-saving class teacher who has had high school experience.

Student Readers

Each sight-saving class pupil in this group is provided with a student reader. This reader is a member of the same class as the pupil with defective vision and is taking exactly the same course of study. Student readers are paid in one city twenty cents an hour for their services. They read aloud all of the assigned lesson material from the ordinary sized type textbooks. Where necessary, they do any copying of material required by the sight-saving class pupil. These student readers are chosen on the basis of their standing in academic work. Preference is given to those who may be helped through high school by the money which they may earn in this way.

Preparation Work

Homework is done at the school under the supervision of the sight-saving class teacher. This group meets immediately after the close of school, and under proper lighting conditions prepares all work for the next day in the school

building. Thus both sight-saving class pupil and the reader, having the same assignments, have their work prepared before leaving school, and the sight-saving class pupil is spared any home work under conditions which cannot be controlled.

In the smaller towns, where there are only one or two sight-saving class pupils in high schools, the same reader system may be used, the work being supervised by the sight-saving class teacher in charge of the elementary class.

All examinations are copied by the sight-saving class teacher on special sight-saving class typewriters. Because so few of the high school texts are available in large type, it is necessary to do extensive copying for high school pupils. Volunteer organizations are very helpful, but in copying foreign languages it may be necessary to hire copyists.

Vocational Guidance

From the beginning, the sight-saving class child must be instructed regarding his own eye condition, and must be guided to think of the things which he may be able to do after he leaves school. It is not possible, with small groups of sight-saving class children, to give actual vocational training. What is done must be more in the nature of guidance along lines which are suited to the children. Where there are vocational schools connected with the public school system, there can be co-operation between the department for sight-saving and the vocational education department, so that such vocational training as may be taken without eyestrain may be provided for sight-saving class pupils.

It is obvious that no sight-saving class pupil should be sent to a printing trades school, although he may possibly be sent to the automotive trades school or to an agricultural school. In the latter, work with the microscope is not advisable for sight-saving class pupils, but other activities may be substituted. A course in salesmanship might be profitable.

Limitations as to Choice of Vocation

No hard and fast rules for vocational guidance can be laid down. But, taking into consideration the eye condition of the child and his natural vocational tendency, some plan may be worked out whereby the child may follow his ideas in some field or other. Myopes, for instance, should be encouraged to take up out-of-door activities and should be guided away from close office work. This is often very difficult because the nearsighted child is able to do close work most easily. It is the opinion of some oculists that any close work done by a myope is likely to be at the expense of his sight.

Co-operation With Vocational Guidance Department

It must be emphasized that the whole problem of vocational guidance is an individual matter. A great deal of help may be obtained from those in charge of the regular vocational guidance work in schools, and from books on vocational guidance. The point must always be kept in mind, however, that the eye conditions limit occupational possibilities. It is encouraging that sight-saving class pupils often solve their own vocational problems, and at graduation come to the sight-saving class teacher saying, "I've got a job." Usually the work which they find for themselves is that which satisfies them and which takes into consideration their eye handicap. Unfortunately there will always be misfits who, in spite of any training, will tend to pursue the wrong course.

Sight-saving class pupils are very much like any other group of children. They are swayed in their choice by parents, teachers, and other pupils. It is part of the sight-saving class teacher's job to reconcile the work chosen with the eye condition of the boy or girl. Any list of occupations suitable for sight-saving class children can at best be only suggestive.

It is not necessary to have formal lessons on the subject of vocational guidance, but as the pupil progresses, particularly in the junior and senior high schools, he hears the subject discussed, and it is at this point that the sight-saving class teacher can be most helpful in presenting modifications of any plan which does not take eye handicaps into consideration.

Since many pupils in sight-saving classes leave school before reaching the high school, the teacher should have some knowledge of the probable length of school life of each child. She can then be prepared to give vocational advice when it is most needed.

Records and Reports

In all probability the sight-saving class teacher comes closer to her children than any regular teacher in public school work. She has these children through a number of grades. She becomes conversant with their mental and physical conditions. She knows a great deal more about family and home conditions than the regular public school teacher has time and opportunity to learn. This knowledge is very valuable in taking care of eyes, in planning school work, and in vocational guidance. It is essential that teachers of these children should keep complete records of all the information having a bearing upon eye conditions and education. This is necessary in order that with a change of teachers the new teacher may have all this information available. Children should be visited in their homes at least twice a year, and in some of the more difficult cases homes should be visited many times. These calls should always be friendly. When there are any complaints to be made, it is usually wise to have the parents come to the school. A record should be kept of each visit, so that when other teachers take up the work as the years go by, any reference to conditions in the past may be verified. Every sight-saving class teacher should have a folder or envelope for each member of her class in which she should keep the following: (1) report of eye condition; (2) report of mental test; (3) record of home visits; and (4) reports of school progress.

Annual Examination by Oculist

An eye record should be made each year by an oculist. This should be done regularly, so that any changes in eye condition may be noted. When improvement above the standards for admission to the class is made, the child may be sent back to the regular grade. When any deterioration is noted, the sight-saving class teacher must try to find

out immediately where the trouble lies and help to remedy it.

Intelligence Tests

Mental tests are sent out from the psychological laboratory by the psychologist who makes the tests. Often the only test made is at the time the child enters the sight-saving class, but if it should so happen that the report places the child on the border line it will be well to have subsequent mental tests made. In the majority of cases regular intelligence tests may be used, giving some of the attentive tests in place of those requiring acute vision. When words or sentences are used it is only fair to give them to a sight-saving class child in type which he is able to read.

Regular School Records

The usual school records should, of course, be kept. Sometimes these records are required to be filed in the principal's office. In such cases the sight-saving class teacher should keep a duplicate copy so that it will not be necessary to go through files for past records of any one of her group. As a child progresses in school his folder will contain a fairly full account of his progress and history, which will be extremely helpful when a new teacher takes up the work or when a child is transferred from one class to another.

Ideas in This Publication are Tentative

In closing, the statement which was made in the beginning should be repeated. These ideas are intended merely as suggestions. They are only tentative. Many new ideas are being formulated, but it is hoped that from this beginning enough suggestions and comments will come to make a very complete statement of the methods of teaching sight-saving classes.

Suggested Readings

- Coffin, Helen J., and Peck, Olive S. *Sight-Saving Classes*, published by Cleveland Public Schools, Cleveland, Ohio, 1926
- Hadley, Hazel. *Sight-Saving Classes in the Public Schools: Presenting the Ohio Plan*, published by State Board of Education, Columbus, Ohio. 1927
- Hadley, Hazel, and Hathaway, Winifred. *Sight-Saving Classes: Their Organization and Administration*, published by the National Society for the Prevention of Blindness, Inc., 450 Seventh Avenue, New York, N. Y. 1929
- Grill, Erma G. *Manuscript Writing and its Value to a Sight-Saving Class Child*, Reprinted from *Educational Method*, April, 1930, by the National Society for the Prevention of Blindness, Inc., 450 Seventh Avenue, New York, N. Y.
- Kerr, James, M.D. *School Vision and the Myopic Scholar*, published by Allen and Unwin, Ltd., 40 Museum Street, London, England. 1925
- Lewis, F. Park, M.D. *What Everyone Should Know About Eyes*, published by the National Health Council, 450 Seventh Avenue, New York, N. Y. 1928
- Peck, Olive S., and Monson, Shandor, M.D. *Outline of Eye Hygiene for Children*, Sight-Saving Classes, Cleveland, Ohio.
- Seham, Max and Grete. *The Tired Child*, published by J. B. Lippincott Company, Philadelphia, Pa. 1926
- May, Charles H., M.D. *Manual of the Diseases of the Eye*, published by William Wood and Company, New York, N. Y. 1930
- Posey, William Campbell, M.D. *Hygiene of the Eye*, published by J. B. Lippincott Company, Philadelphia, Pa. 1918
- *Code of Lighting School Buildings*, published by Illuminating Engineering Society, New York, N. Y. 1924
- Wood, Thomas D., M.D. *Conserving the Sight of School Children*, published by the National Society for the Prevention of Blindness, Inc., 450 Seventh Avenue, New York, N. Y. 1929

Appendix

Editor's note.—The National Society for the Prevention of Blindness, being a philanthropic organization, cannot advertise the products of any company. The following list gives materials actually in use in sight-saving classes. Names and addresses of manufacturers are added merely to facilitate the work of school systems. The list is not intended to be inclusive and there are doubtless on the market many other products of equal value. For the convenience of those wishing to order supplies, the materials are grouped under separate headings.

Seats and Desks

Moulthrop seats with desks lifting to an angle, manufactured by numerous school furniture companies. Local dealers can be consulted.

Henderson Sight-Saving Class Desk, manufactured by The Theodor Kundtz Company, Main & Elm Streets, Cleveland, Ohio.

Books

Books in 24 point type. Clear Type Publishing Committee, 36 Elston Road, Upper Montclair, N. J.

Windowshades

Buff-colored, translucent shades, two for each window, rollers at center. (Single adjustable shades are not recommended for sight-saving classes.) Shades should have protection bar between rollers to prevent glare.

Luther O. Draper Shade Company, Spiceland, Indiana.
Forse Manufacturing Company, Anderson, Indiana.

Tontine shades, manufactured by DuPont de Nemours & Company, Inc., Newburgh, New York.

Maps

Aero Globe, Aero Globe Company, Temple Building, Rochester, New York.

Nystrom Empire Series (75 x 56), A. J. Nystrom and Company, 2249 Calumet Avenue, Chicago, Illinois.

Nystrom Progressive Series (50 x 54), A. J. Nystrom and Company.

Nystrom Political Series, A. J. Nystrom and Company.

Atwood Series, Dobson, Evans Company, Columbus, Ohio.

Finch Topography Series, Dobson, Evans Company.

Columbia Series (may be obtained without lettering if desired). Rand McNally & Company, 270 Madison Avenue, New York, N. Y.

Hart's History Aids (18 x 24). Ten in a series, showing growth of United States, 1748-1919. Bacon & Vincent Company, 49-51 E. Swan Street, Buffalo, New York.

Superior Markable-Washable Maps without lettering. George F. Cram Company, Indianapolis, Indiana.

Geographical Series 8049 (desk maps) Milton Bradley Company, Springfield, Massachusetts.

Pencils

Weatherproof Faber No. 6639. Faber Editor Verisoft No. 1, Eberhard Faber Company, 37 Greenpoint Avenue, Brooklyn, N. Y.

Eagle Auditor No. 286. Veri Black No. 315 Eagle, Eagle Pencil Company, 703 East 13th Street, New York, N. Y.

J. S. Staedtler's Extra Black No. 6120, J. S. Staedtler, Inc., 55 Worth Street, New York, N. Y.

Pens

Speed Ball No. 4, C. Howard Hunt Pen Company, 377 Broadway, New York, N. Y.

Esterbrook Drawing and Lettering Pen No. 1, Esterbrook Steel Pen Manufacturing Company, 97 John Street, New York, N. Y.

Chalks, Crayons, Etc.

Staonal No. 1 Black Wax Crayon, American Crayon Company, 130 West 42nd Street, New York, N. Y.

Old Faithful-Sterling Chalk, white and yellow, American Crayon Company.

Large Textile Mill Crayon for blackboard use (white and in colors), American Crayon Company.

Liquid Tempora colors, American Crayon Company.

Typewriters and Copy Holders

Bulletin Type, Pitch No. 6, Upper and Lower Case for Sight-Saving Classes, Underwood.

Bulletin Gothic No. 48, Type No. 360, Remington.

Portable No. 105 (cuts stencils), Remington.

Bulletin Caslon, Upper and Lower Case, No. 27, L. C. Smith.

Copy Holder, Theodor Kundtz Company, Main & Elm Streets, Cleveland, Ohio.

Paper

Sub. 60, India Egg Shell Ticonderoga, size 9 x 12 lined if desired long or short way, R. H. Thomson Company, 184-190 Washington Street, Buffalo, New York.

Tonal Paper, Milton Bradley Company, Springfield, Mass.

Unprinted newspaper, Local dealers.

Pictures

Mother Goose Silhouettes, A. Flanigan & Company, 920 N. Franklin Street, Chicago, Illinois.

Poster Patterns, based on "Little Folks of Many Lands," Milton Bradley Company, Springfield, Mass.

Birds and Flowers to Color, Ideal Supply Company, Chicago, Ill.

Built Up Posters, Birds, Flowers, Child Life and Hiawatha, Ideal Supply Company.

Multistamp

Outfit No. 5, Multistamp Company, 525 West 21st Street, Norfolk, Va.

Drill and Game Cards and Devices

Harter School Supply Company, 2346 East 71st St., Cleveland, Ohio.

Milton Bradley Company, Springfield, Mass.

Ideal Supply Company, Chicago, Ill.

Beckley-Cardy Company, 17 East 23rd Street, Chicago, Ill.

